UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,684	11/08/2001	Aristo Vojdani	IMSCI2.005A	9590

20995 7590 01/12/2007
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
YANG, NELSON C	
ART UNIT	PAPER NUMBER
1641	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/12/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)	
	10/005,684	VOJDANI, ARISTO	
	Examiner	Art Unit	
	Nelson Yang	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment of claims 1 10, 11 is acknowledged and has been entered.

2. Applicant's cancellation of claim 12 is acknowledged and has been entered.

3. Claims 1-11 are currently pending.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 3-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, from the data provided by applicant, it does not appear that one of ordinary skill in the art would be capable of accurately determining the possibility of autoimmune disease or cardiovascular disease.

Based on applicant's data in figs. 3-6, and on the standard deviation bars shown, the differences in IgA antibody levels in saliva between controls, patients with cardiovascular disease and patients with autoimmune disease is not statistically significant. Looking at the data, one could not make the assumption that higher levels of IgA antibodies would be associated with either autoimmune or cardiovascular disease. Furthermore, applicant does not appear to have established any other means of verifying the validity of the data. Therefore, based on the data as presented, one of ordinary skill in

the invention at the time of the invention could not reasonable determine that the levels of IgA antibody in saliva, much less any other antibody in other fluids such as serum, would actually be significant indicators of the possibility of autoimmune disease or cardiovascular disease and autoimmune disease.

According to Strongin (Strongin, Sensitivity, specificity, and predictive value of diagnostic tests: definitions and clinical applications, 1993, Laboratory Diagnosis of Viral Infections, p. 211-219), a number of characteristics need to be considered in the development of any suitable diagnostic assay. These characteristics include the sensitivity of the assay, the true-positive test rate, the false-negative test rate, the specificity, the true-negative test rate, the false positive test rate, the predictive value, the prevalence, the efficiency or percentage of all results that are true, and the accuracy of the recited diagnostic assay. However, none of these characteristics appear to have been considered.

Additional considerations must also be examined to enable the clinician to practice the invention, including assessment of when the maximum sensitivity, maximum specificity, and maximum efficiency are desired, how is the maximum sensitivity or specificity achieved, and how is the predictive value maximized. An essential understanding of these factors is required to enable the skilled artisan to accurately use and interpret any given diagnostic test. Specifically, the specification fails to disclose what is meant by the possibility of autoimmune disease or by the possibility of cardiovascular disease with autoimmune disease. In particular it is unclear how much more likely a patient with the possibility of autoimmune disease or cardiovascular disease with autoimmune disease would become afflicted with those diseases compared to a

patient without the possibility possibility of autoimmune disease or cardiovascular disease with autoimmune disease.

6. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for synthetic peptides that comprise SEQ ID Nos: 5-7, does not reasonably provide enablement for other synthetic peptides. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In particular, with other synthetic peptides that do not comprise SEQ ID Nos: 5-7, it would not be clear what the binding affinities of the antibodies, specifically IgA would be, and therefore, it would not be possible to accurately determine the levels of of IgA toward the synthetic peptide. Given the already high standard deviation of applicant's results (see figs. 3-6), one would not be able to accurately determine whether a patient had a higher level of an antibody such as IgA relative to normal healthy control patients.

7. Claims 1, 3-4, 7-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for immune complexes involving DNA-anti-DNA complexes (p. 7, para. 0027), does not reasonably provide enablement for all immune complex diseases. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In claim 1, applicant has recited the determination of possibility of immune complex diseases. Applicants, however, do not defined what the antibodies are, which would render immune complexes to be non-specific markers that would not necessarily be associated with an immune complex

disease. For example, the detection of antibodies bound to bacteria would not normally be indicative of an autoimmune disease. Furthermore, the only immune-complex disease applicant has only provided support in the specification for is SLE, through DNA-anti-DNA complexes (p.7, para. 27). Applicant has not provided any support that detection of any other immune complexes would be indicative of autoimmune or cardiovascular disease.

8. Claims 1, 3-4, 7-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the detection of IgA antibody levels in saliva, does not reasonably provide enablement for the detection of IgG and IgM antibody levels. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In particular, applicant has only provided experimental data showing that the levels of IgA would even be indicative of determining the possibility of cardiovascular or autoimmune disease. Even then, the correlation between the levels of IgA and the possibility of cardiovascular or autoimmune disease seems tenuous, due to the standard deviation. It is unclear if the levels of IgG or IgM would correlate to the possibility of cardiovascular or autoimmune disease, and applicant has not provided any evidence that would suggest that they do. Therefore, one of ordinary skill in the art at the time of the invention could not reasonably assume that determining the levels of IgG or IgM or any other antibody other than IgA would correlate with the possibility of cardiovascular or autoimmune disease.

9. Claims 1, 3-4, 7-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the detection of IgA antibody levels in saliva, does not reasonably provide enablement for the detection of antibody levels in serum. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In particular, applicant has only provided experimental data showing that the levels of IgA in saliva would even be indicative of determining the possibility of cardiovascular or autoimmune disease. Applicant has not provided any data showing that the levels of IgA or any other antibody would be similar in serum. One of ordinary skill in the art at the time of the invention therefore could not reasonably assume that the levels of IgA, IgG, and IgM in serum would necessarily correlate with the possibility of cardiovascular or autoimmune disease.

Response to Arguments

10. Applicant's arguments with respect to claims 1, 3-12 have been considered but are moot in view of the new ground(s) of rejection. It is noted that while applicant's amendment overcame some of the enablement issues, the amendment did not fully overcome all the enablement issues. However, since all the enablement issues were not clearly addressed in the rejection in the previous office action, the office action has not been made final.

Conclusion

11. No claims are allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson Yang
Patent Examiner
Art Unit 1641

LONG V. LE 01/04/07
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600